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APPLICATION AND EVALUATION OF SATELLITE REMOTE SENSING DATA AND AUTOMATIC PROCESSING TECHNIQUES FOR STATE-WIDE LAND USE AND OTHER RESOURCE MANAGEMENT

LANDSAT FOLLOW-ON INVESTIGATION #20820

(CONTRACT NO. NAS5-20918)

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OCTOBER, 1976

PROGRESS REPORT FOR QUARTER ENDING OCTOBER 21, 1976

20820

Prepared for

GODDARD SPACE FLIGHT CENTER

GREENBELT, MARYLAND 20771

INTRODUCTION

This report summarizes activities under the State of Mississippi's LANDSAT Follow-on Investigation, for the period ending October 21, 1976. This effort involves joint activities with the NASA/JSC Earth Resources Laboratory at Bay St. Louis, Mississippi, and with a number of key state agencies. The Office of Science and Technology (Office of the Governor) provides overall project management, and coordinates the multi-agency participation.

This reporting period constitutes the sixth quarter of operations under the contract. During this period, significant progress has been made in the processing of LANDSAT data, using NASA-developed pattern-recognition software on state computers. Consequently, efforts are proceeding toward achieving the major objectives of the investigation - the software conversion and subsequent production of specific resource inventories.

The contents of this report are organized consistent with prior reports and will serve as an update, with minimum repetition of previously reported information.

A. PROBLEMS

During this quarter the resignation of a key computer specialist occurred. The loss of this person will slow the software conversion schedule, but will not otherwise impede the investigation. It is worth noting that the person involved was employed by a contractor who is installing the same LANDSAT System for a major federal agency.

B. ACCOMPLISHMENTS

Progress continues in all major task areas of investigation. Emphasis is moderated by our legislative budget cycle. Those activities essential for the January assembly are therefore given preference.

1. Software Conversion Effort Maximum effort was made to complete the software conversion from the NASA/ERL pattern recognition and georeferencing programs to run on the state computers (IBM 370/155) in order to achieve by the end of the year a statewide classification from LANDSAT CCT's. While additional modification of the programs will result in more efficient machine use, the software is ready for initial use with optimization to be accomplished later.

2. Acquisition of Spacecraft Data No additional spacecraft data was acquired during this quarter. Previously acquired data gives two statewide coverages in different seasons.

3. Statewide LANDSAT Classification Work on the statewide surface classification initiated in earlier quarters continued

throughout this reporting period. The sequence of flow through the PATREC system was described briefly in the previous report. The documentation of those programs is proceeding simultaneously with the classification. The classification is handled on a frame by frame (LANDSAT scene) basis. Therefore, different scenes will be in different stages of development. The documentation of the software programs at this time is:

PROGRAM	DOCUMENTATION	REWRITE
ERTREF	95%	Complete
DAPIDS	95%	Complete
ISOFOLD	80%	Complete
STAT	80%	Complete
ELIPSE	80%	NA
ASSIGN	50%	50%
GEOREF	-0-	50%
FORMATS	-0-	NA

C. SIGNIFICANT RESULTS

None to report as yet.

D. PUBLICATIONS

None to report as yet.

E. RECOMMENDATIONS

None to report as yet.

F. AIRCRAFT DATA

Under this investigation high resolution products from aircraft data are to be utilized in three ways: (1) To evaluate the accuracy of the products from LANDSAT data; (2) for evaluation from a standpoint of using satellite data for various spectral bands; and (3) providing high resolution data of critical areas for applications evaluations. To date, the investigation has not progressed far enough in the processing of aircraft data to make an assessment of its usefulness. This assessment will be made and reported in the later phases of the investigation.